

# Ethan Lau

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## Education

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**BS**    **University of Maryland**, Computer Science – College Park, MD

Apr 2025

## Experience

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**Software Engineer Intern**, ICR, Inc – Aurora, CO

June 2024 – Aug 2024

- Optimized simulation software by reducing memory usage by 18% and runtime by 65%.
- Developed and implemented a pipeline for error-aware clustering on geospatial data using Cython, scikit-learn, and NumPy.

**Software Developer Intern**, DisputeSoft – Bethesda, MD

June 2023 – Aug 2023

- Developed Python scripts, leveraging pandas for data manipulation and ggplot2 in R for data visualization, to programmatically generate data plots used in client cases.
- Enhanced the code analysis software by implementing optimized string comparison algorithms and programmatically generated parsers, leading to a 89% reduction in memory usage and increased versatility and reliability.
- Contributed to the development of a user-friendly web-based front end for the company's proprietary software using React and JavaScript, improving user accessibility.
- Designed and implemented a Node.js micro-service to facilitate seamless file uploading.

## Projects

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**Mangatra | Rust, OpenCV**

- Developed a versatile CLI/GUI tool, that also functions as a RESTful and gRPC server, to simplify the translation process for manga and comics.
- Leveraged computer vision tools such as OpenCV, libtesseract, and SOTA CNNs to implement robust text box recognition and parsing capabilities.

**Visar | Rust**

- Developed a sorting algorithm visualizer using native rendering libraries such as Vulkan and OpenGL.
- Simulated different sorting algorithms, such as radix, merge, and heap sort, both visually and audibly.

**Chord | C**

- Implemented the Chord protocol, a distributed hash table protocol, from scratch in C.
- Utilized Protocol Buffers and UDP to communicate between nodes.

**Bittorrent Client | Go**

- Created a bittorrent client from scratch with features such as optimistic unchoking and UDP tracker support.

## Skills

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**Languages:** Rust, Python, Cython, C#, SQL, Java, C, C++, JavaScript, TypeScript, HTML/CSS, R, Go, Ruby, Ocaml, Elixir

**Frameworks:** PyTorch, React, NodeJS, Express.js, WCF, ggplot2, matplotlib, pandas, .NET, MSSQL, PostgreSQL, Phoenix, Agile Development

**Tools:** Linux, Docker, gdb, MATLAB, Git, Bash, top